UNIFIED COMMAND
PENN 460 OIL SPILL

memo

To: Harbormasters, Beach Managers
In Lower Narragansett Bay

From: RI DEM, U.S. Coast Guard and Penn Maritime, Inc.

Date: 7/8/00

Re: Tarball Advisory

Enclosed is an advisory on dealing with the possibility that a member of the public may encounter tarballs along the beach or shore in your area. Please pass this along to the appropriate members of your staff and any affected individuals.

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Tarballs

What are tarballs and how do they form?

Tarballs, the little, dark-colored pieces of oil that stick to our feet when we go to the beach, are actually remnants of oil spills. When crude oil (or a heavier refined product) floats on the ocean surface, its physical characteristics change. During the first few hours of a spill, the oil spreads into a thin slick. Winds and waves tear the slick into smaller patches that are scattered over a much wider area. Various physical, chemical, and biological processes change the appearance of the oil. These processes are generally called "weathering."

Initially, the lighter components of the oil evaporate much like a small gasoline spill. In the cases of heavier types of oil, such as crude oil or home heating oil, much of the oil remains behind. At the same time, some crude oils mix with water to form an emulsion that often looks like chocolate pudding. This emulsion is much thicker and stickier than the original oil. Winds and waves continue to stretch and tear the oil patches into smaller pieces, or tarballs. While some tarballs may be as large as pancakes, most are coin-sized. Tarballs are very persistent in the marine environment and can travel hundreds of miles.

A large tarball on a rock.

How long will tarballs remain sticky?

Weathering processes eventually create a tarball that is hard and crusty on the outside and soft and gooey on the inside, not unlike a toasted marshmallow. Turbulence in the water or beach activity from people or animals may break open tarballs, exposing their softer, more fluid centers. Scientists have not been very successful at creating weathered tarballs in the laboratory and measuring the thickness of the crusty outer layer. Therefore, we don't know how much energy is needed to rupture a tarball.

We do know that temperature has an important effect on the stickiness of tarballs. As air and water temperatures increase, tarballs become more fluid and, therefore, sticky—similar to an asphalt road warmed by the summer sun. Another factor influencing stickiness is the amount of particulates and sediments present in the water or on the shoreline, which can adhere to tarballs. The more sand and debris attached to a tarball, the more difficult it is to break the tarball open. These factors make it extremely difficult to predict how long a tarball will remain sticky.

Are tarballs hazardous to your health?

For most people, an occasional brief contact with a small amount of oil, while not recommended, will do no harm. However, some people are especially sensitive to chemicals, including the hydrocarbons found in crude oil and petroleum products. They may have an allergic reaction or develop rashes even from brief contact with oil. In general, we recommend that contact with oil be avoided. If contact occurs, wash the area with soap and water, baby oil, or a widely used, safe cleaning compound such as the cleaning paste sold at auto parts stores. Avoid using solvents, gasoline, kerosene, diesel fuel, or similar products on the skin. These products, when applied to skin, present a greater health hazard than the smeared tarball itself.

Tarballs bits and pieces

Beach cleanup: There is no magic trick to making tarballs disappear. Once tarballs hit the beaches, they may be picked up by hand or by beach-cleaning machinery. If the impact is severe, the top layer of sand containing the tarballs may be removed and replaced with clean sand.

Are there more tarballs on beaches along the East Coast than on the West Coast? The number of tarballs found on the beach depends on several factors: tanker traffic, wind pattern, sea currents, whether an oil spill occurred recently, and how often the beach is cleaned. Obviously, some beaches may have more tarballs than others, but to our knowledge, East Coast beaches are not necessarily more polluted with tarballs than beaches along the West Coast of the United States.

Reporting: New tarballs appearing on a beach may indicate an oil spill. If you notice unusual numbers of tarballs on the beaches, call the U. S. Coast Guard any time at 800-424-8802.

References

Agency for Toxic Substances and Disease Registry. 1999. Toxicological Profile for Total Petroleum Hydrocarbons (TPH). Atlanta: U.S. Department of Health and Human Services. 231 pp.

Fingas, M.F., W.S. Duval, and G. B. Stevenson. 1979. The Basics of Oil Spill Cleanup. Hull, Quebec, Canada: Minister of Supply and Services. 155 pp.

Payne, J.R,. and C.R. Philips. 1985. Petroleum Spills in the Marine Environment: Chemistry and Formation of Water-in-Oil Emulsions and Tar Balls. Chelsea, MI: Lewis Publishers. 148 pp.

What about tarballs in Narragansett Bay?
On July 5, 2000, the Tank Barge Penn No. 460 spilled less than 14,000 gallons of No. 6 fuel oil in the vicinity of McAllister Point in Narragansett Bay. Penn Maritime, in conjunction with the United States Coast Guard and Rhode Island Department of Environmental Management, is responding to the spilled oil. Much of this spill was contained or adhered to the shoreline in the vicinity of McAllister Point, however portions that were not recovered may result in occasional small tarballs or other oiled debris outside the active cleanup area.

Recommendations contained in this fact sheet regarding tarballs apply to this spill. Cleanup operations will seek to remove tarballs and oiled debris, but people may still encounter oil that was not detected or was not present during a cleanup visit. Avoid tarballs where possible and report oil sightings to the Unified Command for the cleanup at 401-847-7573, or after hours at 401-435-2300. If people come into contact with tarballs, refer to the safety and cleanup information on the reverse side of this sheet.

If you have claims for any damages resulting from this spill (such as business losses, property damage), contact Penn Maritime's Claim Office at 800-528-5760 ext. 6444.

[Narragansett Bay section added by Penn No. 460 Unified Command, July 2000]

U.S. Department of Commerce

National Oceanic and Atmospheric Administration • National Ocean Service

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